Physiological correlates of performance in international-standard squash players

Authors: Wilkinson, Mick Cooke, M. St Clair Gibson, Alan Winter, Edward M. Thompson, Kevin

Abstract:

Tactical, technical and fitness factors are important for success in elite squash. While tactical and endurance fitness aspects have been explored, altered demands that have resulted from rule changes and absence of specific tests of high-intensity exercise capabilities have prevented identification of elements of fitness that correlate with performance in elite-standard players. Accordingly, the purpose of this study was to investigate relationships between test scores and player rank in such players. With institutional ethics approval, 31 players from the England Squash performance programme participated (11 women and 20 men, mean±SD body mass 62.4±5.5 kg and 73.1±7.5 kg respectively). After habituation, participants completed countermovement and drop-jump tests, squash-specific tests of change-of-direction speed and multiple-sprint ability and the multistage fitness test in one test session. Short recoveries were allowed between tests. World rank at the time of testing was obtained from the Professional Squash Association website. In men, change-of-direction speed ($\rho=0.59$, $p=0.02$, $n=14$) multiple-sprint ability ($\rho=0.78$, $p<0.01$, $n=13$) and fastest sprint from the multiple-sprint test ($\rho=0.86$, $p<0.01$, $n=13$) correlated with world rank. In women, only fastest repetition from the multiple-sprint test correlated with world rank ($\rho=0.65$, $p=0.04$, $n=10$). Measures of high-intensity exercise capability correlated with world rank in elite-standard men and women players. Endurance capability did not relate to rank in either the men or women. The results suggest that high-intensity, variable-direction exercise capabilities are important for success in elite squash